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# **Error Detector Card Technology Insertion Initiative**

## **Basic Bradley Tow Missile Launcher**



# TOW EDC Problem

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**Identified: By MICOM as a high failure/high cost Operation and Maintenance Driver and recommended for redesign**

## **Problem:**

- **Obsolete Parts**
- **Sole Source**
- **High Failure Rate**
- **Sole Source Would Not Manufacture**
- **Limited Rights**
- **Supply**

**A requested buy was no bid with no future source identified**



# **TOW ERROR DETECTOR CARD**

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**Technology Insertion Recognized as a Solution to  
Achieve Cost Reduction and Performance Enhancement**

- **Redesign Error Detector Assembly**
- **Eliminate Obsolete Parts**
- **Use Current Technology Components**
- **Improve Reliability**
- **Multiple Sources for Components**
- **Create Level III Technical Data Package**
- **Manufacture Three Engineering Prototypes**
- **Manufacture Two Pre-Production Assemblies**
- **Manufacture 178 Error Detector Assemblies**

**EDC was critical to Guide Missile to Target**



# **TOW EDC**

## **Technology Insertion Solution**

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- **Halt All Procurements**
  - **Use existing stock**
  - **Field through attrition**
  - **Drain Pipeline**
- **Redesign**
- **Use Current Components for Reliability**
- **Eliminate Sole Source Concern**



# **TOW Error Detector Card Tech Insertion Improvements**

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- **Reduced Commercial Parts From 14 to 3**
- **Combined 23 Integrated Circuits into a Field Programmable Gate Array and its associated memory chip**
- **Eliminated Selected Item**
- **Added Four additional Test Points to the Edge Connector**
- **Added trimpots for Critical Voltage and Timing adjustments**



# **TOW Error Detector Card Redesign Improvements**

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- **The Printed Wiring Board Layout has been improved to minimize Electro Magnetic Coupling, Emission, and Radiation, ie. Maximize Electro Magnetic Compatibility (EMC)**
- **Noise Reduced by Proper Component Placement and Improved Design.**



# Error Detector Redesign Summary

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- **Obsolete Components Eliminated**
- **All components are MIL or /883 Reliability**
- **Lower Power Consumption**
- **99% of Components have Multiple Sources**
- **Component Lead Times are Shorter - Reduced Production Lead Time (PLT)**
- **High Quality Level III Technical Data Package**
- **Eliminates Sole Sourcing**
- **Reliability Improved Significantly**
- **High EMC Printed Wiring Board**
- **Improved Testability/Producibility**